

A proposal of a new genus *Archaeocasis* for *Trichopterigia micradelpha* Prout (Lepidoptera, Geometridae)

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Abstract *Archaeocasis* gen. nov. is proposed for *Trichopterigia micradelpha* Prout and described. The genus is more closely related to the genera *Acasis* Duponchel and *Otoplecta* Warren than to *Trichopterigia* Hampson. A brief description of *Archaeocasis micradelpha* (Prout), comb. nov. is given as well.

Key words Geometridae, Larentiinae, Trichopterygini, *Archaeocasis* gen. nov., *Archaeocasis micradelpha* (Prout), comb. nov.

Recently, I found in my collection a male strange larentiine moth, deriving from a central mountainous area of Taiwan. The moth close agreed with the original description and an adult figure of *Trichopterigia micradelpha* Prout, 1958, recorded from India and Bhutan, but the characteristics of the male genitalia were quite different from those of *Trichopterigia* species. Therefore, I could not arrive at the conclusion that the Taiwanese specimen is identical with *T. micradelpha* Prout. In 'Moths of Nepal, part 2' edited by T. Haruta, Yazaki (1993) recorded *T. micradelpha* and figured the male genitalia which well resemble those of the Taiwanese specimen. He also indicated that a further study is needed to clarify the systematic position of this species, because it differs from other *Trichopterigia* species in the male genital structures.

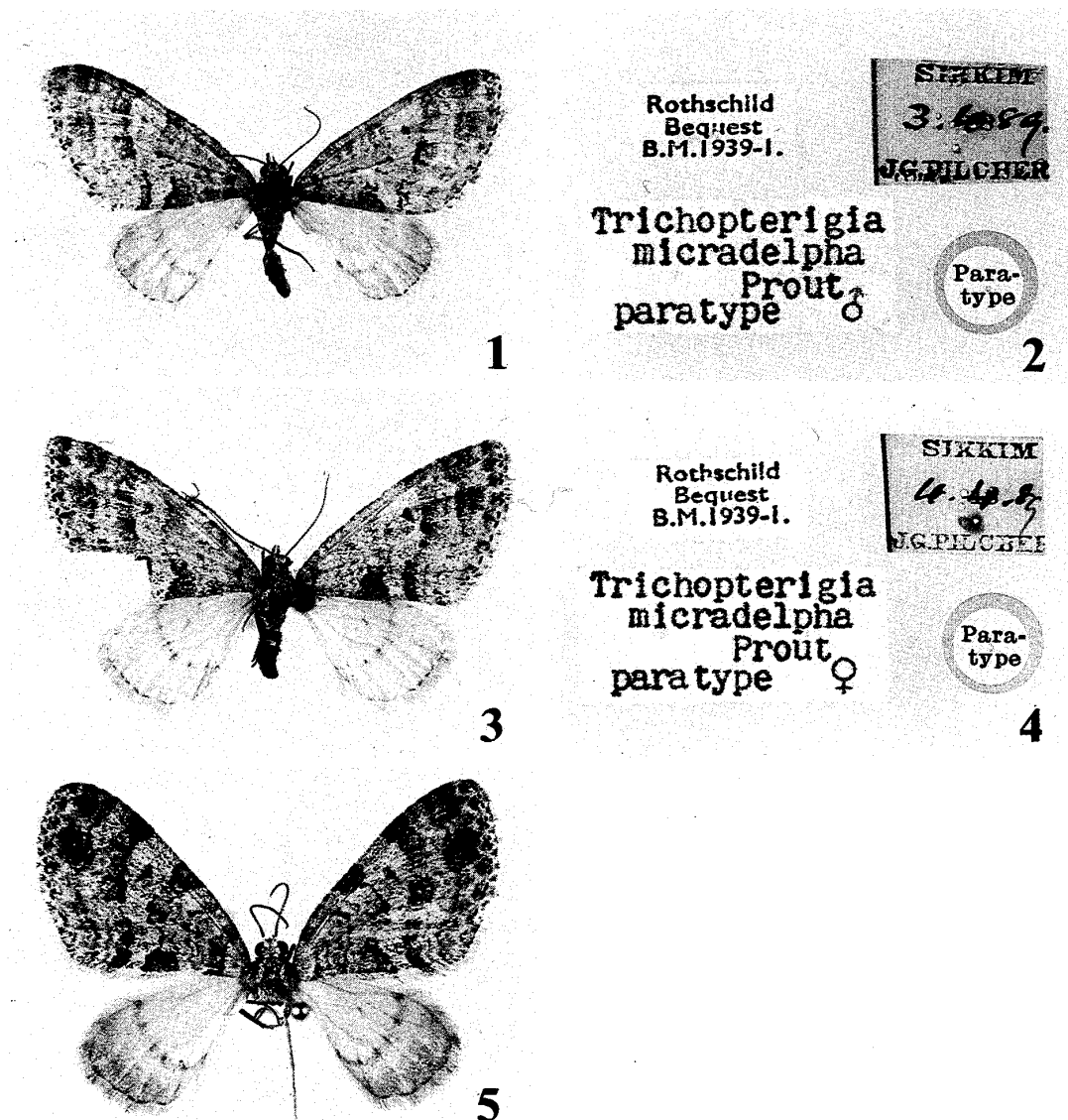
Through the courtesy of Dr Malcolm J. Scoble of The Natural History Museum, London, I could compare the Taiwanese specimen with the type material of *T. micradelpha*. As a result of examination, I reached the following conclusions : 1. both the Taiwanese and Nepalese specimens belong to *Trichopterigia micradelpha* Prout ; 2. judging from the characteristics of the male and female genitalia, this species is more closely related to the members of the genera *Acasis* Duponchel and *Otoplecta* Warren than to those of *Trichopterigia*, but it seems to belong to neither *Acasis* nor *Otoplecta* ; 3. the genitalic characters also suggest that a new genus for this species should be established. In this paper a new genus, *Archaeocasis* gen. nov., is proposed for *Trichopterigia micradelpha* Prout and described. A systematic position of the genus is briefly discussed.

Archaeocasis gen. nov.

Type species : *Trichopterigia micradelpha* Prout, 1958, *Bull. Br. Mus. nat. Hist. (Ent.)* 6 : 454, fig. 53.

Antenna filiform in both sexes. Chaetosema present, continuous with each other on vertex. Labial palpus porrect anteroventrally, about twice as long as eye diameter. Forewing with one accessory cell (probably 1st accessory cell lost) ; M_1 arising from accessory cell. Hind wing with a small double folded lobe (1/4 length of inner margin of hindwing) in male ; $Sc+R_1$ fused with R_s near base and separate from it before end of discal cell ; R_s and M_1 stalked in both sexes ; M_2 arising near M_3 . Hindtibia with a pair of terminal spurs, bearing hair tufts at its inner base in male. Abdominal pouch (Fig. 8) rather long, beyond middle of the 3rd abdominal segment.

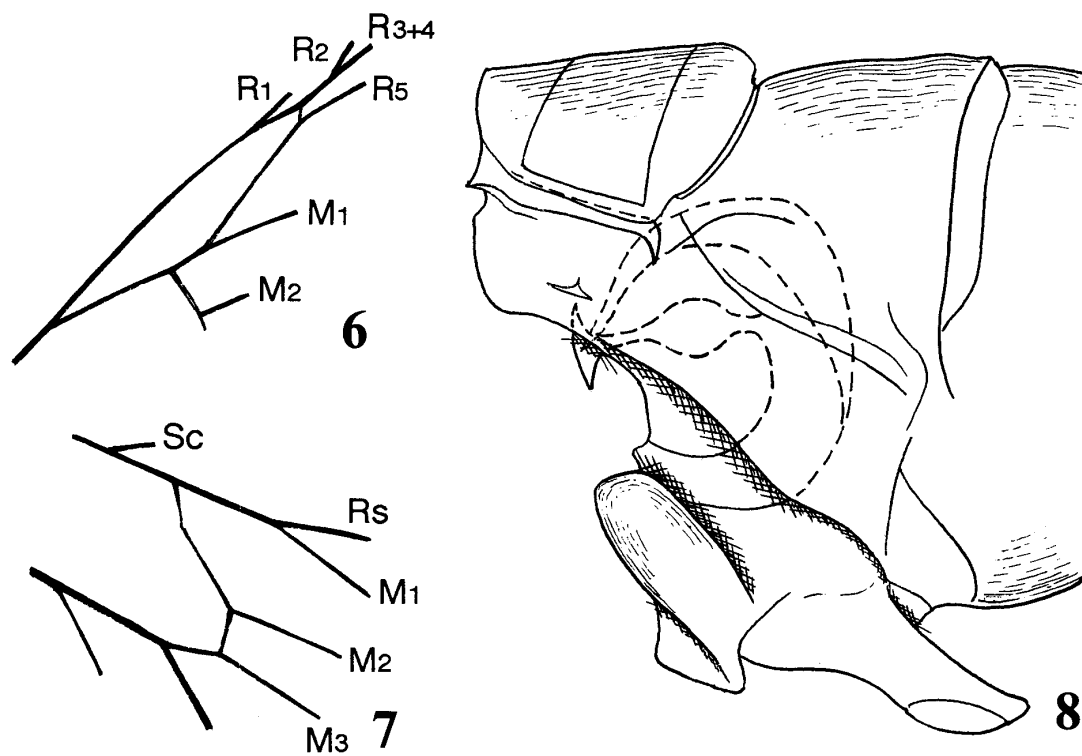
Male genitalia (Figs 9-17). Tegumen narrow in dorsal view ; uncus short, slightly



Figs 1-5. *Archaeocasis micradelpha* (Prout). 1. Paratype, ♂. 2. Ditto, labels. 3. Paratype, ♀. 4. Ditto, labels. 5. Taiwanese specimen, ♂.

arched, broad near base; socius rounded. Vinculum U-shaped in dorsal view; saccus narrow and rounded. Valva rather short; dorsobasal parts of costae extending anteromesally and fused with each other to form a sclerotized sac; cucullus small, broad, rounded; valvula inconspicuous; harpe slender; sacculus sclerotized, broad at base and gradually narrowed towards caudal end; a free arm of sacculus with many stout spines on its inner surface. Phallus slender, shorter than valva and with cornuti consisting of many small spines. Juxta as in Fig. 17.

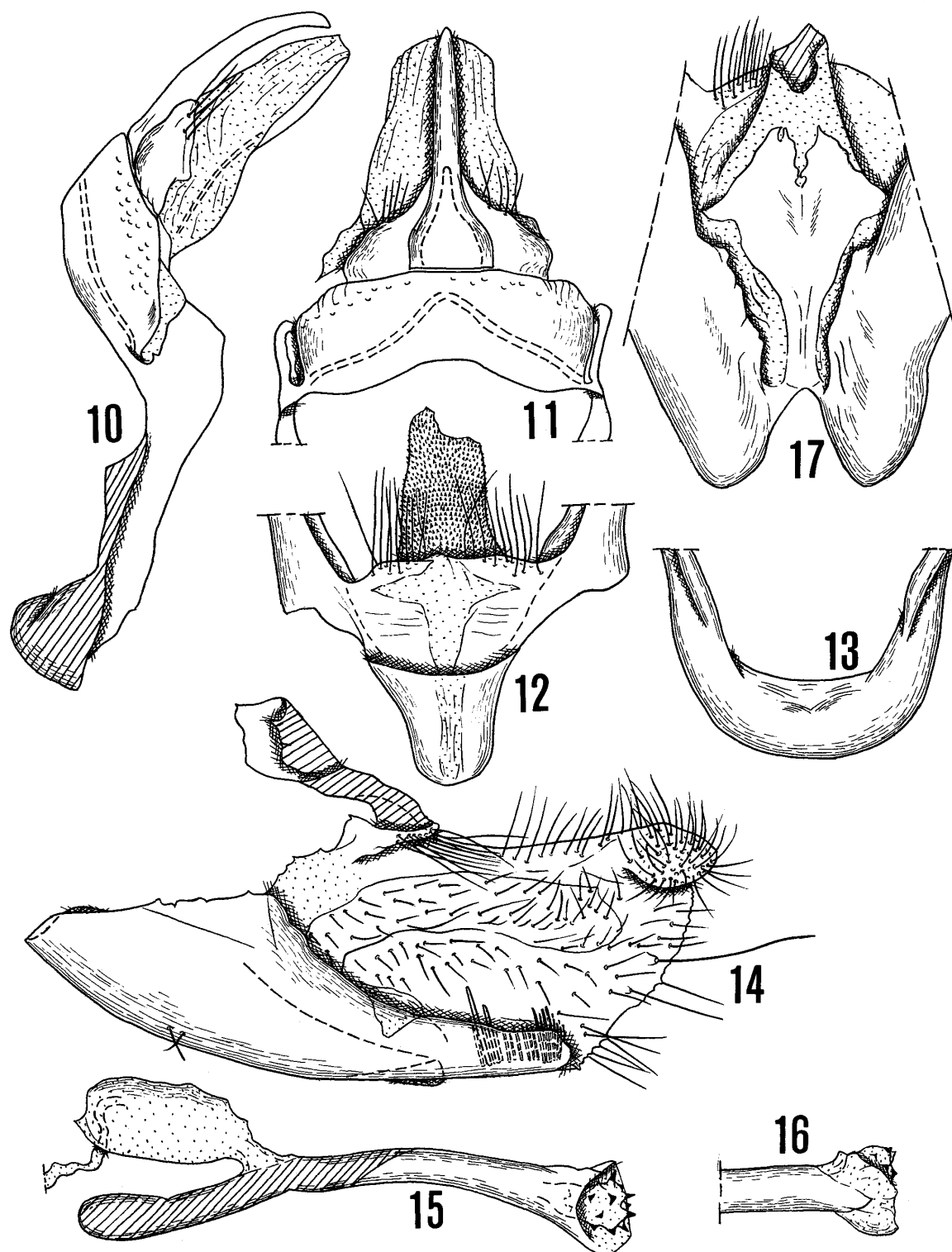
Female genitalia (Figs 18-23). Anterior apophysis very short. Anterior part of 8th abdominal segment folded caudally. Corpus bursae bulbous, with a globous appendix bursa cephaloventrally, scattered with many small spines ventrally and surrounded with a row of needle-like spines interrupted dorsoventrally. Lamella antevaginalis projected caudally; lamella postvaginalis with many granules. Dorsal part of intersegmental membrane between 8th abdominal segment and papillae anales with a finger-like concavity, sclerotized apically on dorsum. Ventral membrane between papillae anales bearing a slender sclerite.



Figs 6-8. *Archaeocasis micradelpha* (Prout). 6. Accessory cell of forewing. 7. Discal cell of hindwing. 8. Abdominal pouch, male.

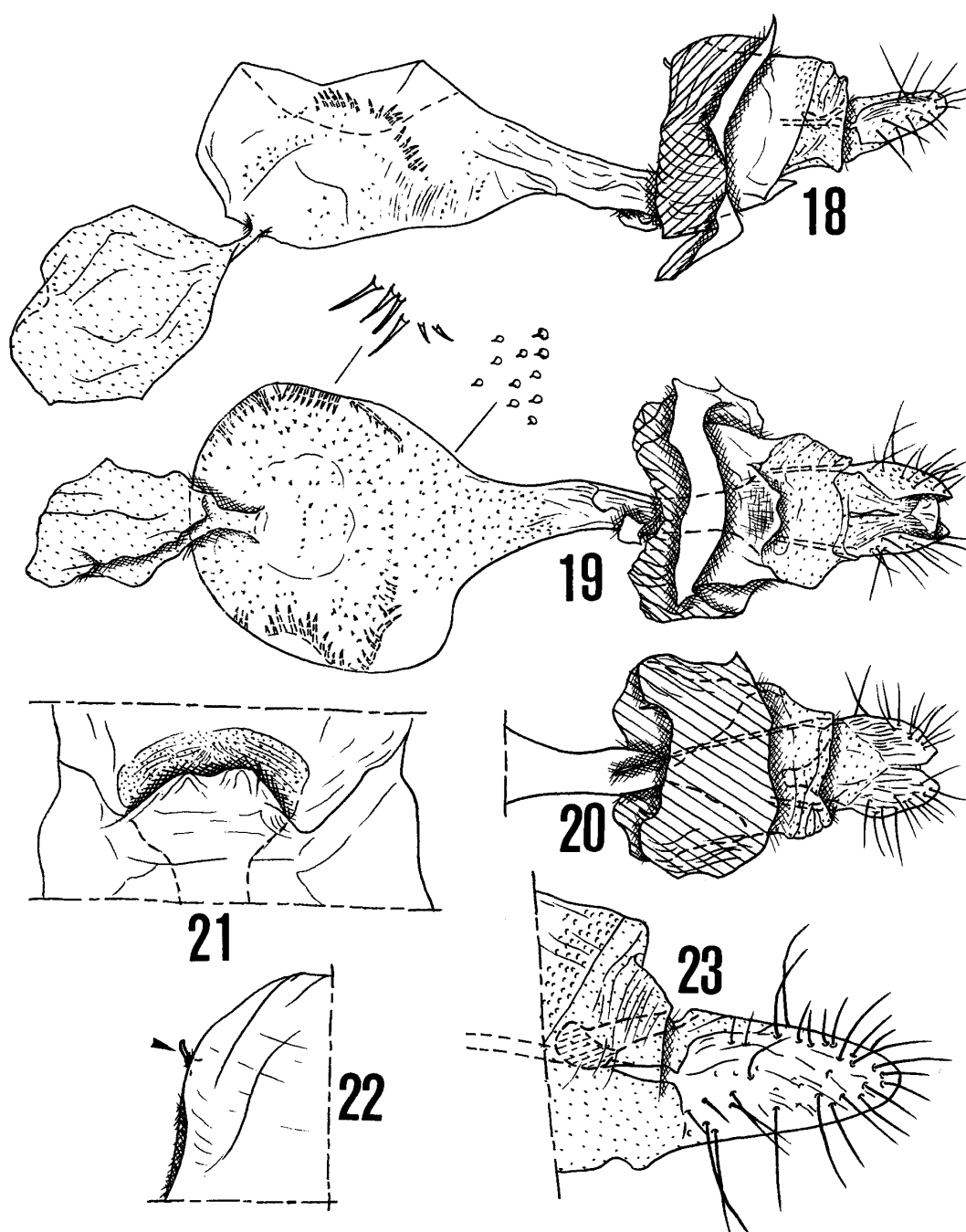


Fig. 9. Male genitalia of *Archaeocasis micradelpha* (Prout), paratype.



Figs 10-17. Male genitalia of *Archaeocasis micradelpha* (Prout), Taiwanese specimen.
 10. Ring, lateral aspect. 11. Tegumen, dorsal aspect. 12. Basal part of valvae, dorsal aspect. 13. Saccus, dorsal aspect. 14. Right valva, inner aspect. 15. Phallus, lateral aspect. 16. Caudal end of phallus, right side. 17. Juxta, ventral aspect.

Remarks. *Archaeocasis* is similar to the genus *Trichopterigia* Hampson in appearance and the wing venations (forewing with one accessory cell; hindwing with veins Rs and M₁ stalked), but differs from it in the following genital characteristics: 1. the dorsobasal



Figs 18-23. Female genitalia of *Archaeocasis micradelpha* (Prout), paratype. 18. Whole genitalia, lateral aspect. 19. Whole genitalia, ventral aspect. 20. Eighth segment and papillae anales, dorsal aspect. 21. Lamellae antevaginalis and postvaginalis, ventral aspect. 22. Anterior apophysis, lateral aspect (arrow). 23. Papilla analis, lateral aspect.

parts of the costae are extending anteromesally and fused with each other; 2. the cucullus is rather short, broad and rounded; 3. the corpus bursae is partly covered with spines. These unique characters are shared with the genera *Acasis* Duponchel and *Otoplecta* Warren. From the latter two genera, *Archaeocasis* is distinguished by the male hindwing with veins Rs and M₁ stalked (plesiomorphous), narrow tegumen (apomorphous) and the presence of a finger-like concavity on the intersegmental dorsal membrane between the 8th abdominal segment and the papillae anales (apomorphous).

However, their sister group relationships are not treated here, because it is doubtful whether the genus *Acasis* is monophyletic or not. Their relationships will be discussed by me in the future, along with a problem of the monophyly of the genus *Acasis*.

Archaeocasis is monobasic at present.

***Archaeocasis micradelpha* (Prout), *comb. nov.* (Figs 1-23)**

Trichopterigia micradelpha Prout, 1958, *Bull. Br. Mus. nat. Hist. (Ent.)* 6: 454, fig. 53; Yazaki, 1993, *Tinea* 13 (Suppl. 3): 109, pl. 59, fig. 28.

♂ ♀. Forewing length 13.0 mm in a Taiwanese specimen (male); 14.3 mm in male (paratype); 14.2 mm in female (paratype). Antennae blackish brown; apical part of each segment brownish white. Head grayish olive, scattered with white scales. Thorax grayish olive; tegula with blackish brown scales; fore- and midlegs fuscous on outer surface except for a white terminal end of each tarsal segment, glossy yellowish white on inner surface; hindleg glossy yellowish brown; hair tufts in male yellowish white. Forewing yellowish white, scattered with grayish olive scales, with grayish olive lines or bands; basal, antemedial and postmedial bands bordered with fuscous line; discoidal dot fuscous, conspicuous; terminal dots fuscous; undersurface pale grayish brown with darker stripes. Hindwing glossy grayish white, with grayish brown indistinct discoidal dot, pale grayish brown postmedial line and paler broad band along termen; undersurface glossy brownish white, with darker discoidal dot and postmedial line. Abdomen grayish brown, fringed with pale reddish white at posterior margin on each 2nd to 8th segments; venter pale reddish white.

Male genitalia. As described for the genus.

Female genitalia. As described for the genus.

Specimens examined. 1 ♂, TAIWAN, Chiayi County, Fenchihu, 28. II. 1982 (S. Hashimoto leg.), Genitalia No. SH-844; paratypes: 1 ♂ 1 ♀ with labels shown in Figs 2 & 4.

Distribution. Nepal (Godavari, Mt Phulchouki), India (Sikkim, Darjeeling), Bhutan (Bauxa), and Taiwan (Fenchihu). New record from Taiwan.

Host. Unknown.

Remarks. The Taiwanese specimen is smaller than the nominotypical race, but otherwise not distinguishable.

Acknowledgments

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References

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摘 要

Trichopterigia micradelpha Prout をもとに新属 *Archaeocasis* の提出 (鱗翅目: シャクガ科)
(橋本里志)

筆者は台湾から未記録の *Trichopterygini* 族の雄1個体を調べたところ、翅脈や斑紋において *Trichopterigia micradelpha* Prout, 1958 の原記載とよく一致した。ところが、雄交尾器は *Trichopterigia* 属のそれとは著しく異なり、むしろ *Acasis* 属や *Otoplecta* 属の交尾器に近いものであった。Yazaki (1993) は、'Moths of Nepal, part 2' の中で *Trichopterigia micradelpha* Prout を記録し、雄交尾器の写真を載せた。同時に、彼は他の *Trichopterigia* 属との雄交尾器の違いを述べ、本種の分類学的地位を明確にするには、さらなる研究の必要性を説いた。また、彼の示した雄交尾器は台湾産のものと同一であった。

筆者は、ロンドン自然史博物館の Scoble 博士のご好意で、*Trichopterigia micradelpha* Prout の副模式標本 (1 ♂ 1 ♀) と台湾産標本とを比較する機会を得、次のような結論に達した。1. 台湾産の個体は、*Trichopterigia micradelpha* Prout と同一種である。2. 雌雄交尾器の形質から判断すると、本種は *Trichopterigia* 属よりも *Acasis* 属や *Otoplecta* 属により近縁である。3. 雌雄交尾器の特徴を基に、本種を模式種として新属 *Archaeocasis* を設ける。

Archaeocasis gen. nov.

Type species: *Trichopterigia micradelpha* Prout, 1958.

本属は、*Trichopterigia* 属とは雄交尾器の左右の valva の costa の基部背方が内面中央部で融合すること、valva の cucullus は短く先端が丸みを帯びること、雌交尾器の corpus bursae は針状の突起で部分的に覆われることなどの形質で区別される。さらに、*Acasis* 属や *Otoplecta* 属とは、後翅の Rs 脈と M₁ 脈が有柄であること、雄交尾器の tegumen の背面がせまいこと、雌第8腹節と papillae anales との環節間膜背面に指状の陥入部が存在することなどの形質で区別される。後二者の属との姉妹群関係については、*Acasis* 属の単系統性に問題があるので本研究では扱わない。

Archaeocasis micradelpha (Prout), comb. nov.

台湾産個体の前翅長 (13.0 mm) は、副模式標本の前翅長 (14.3 mm, 14.2 mm) に比して短い、他の点では区別し難い。

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